

WHAT IS CLAIMED IS:

1. A component operating with bulk acoustic waves, comprising:
  - an asymmetric first port which has a signal-carrying connection;
  - a symmetrical second port with a first and a second connection;
  - a first resonator having a first electrode, a second electrode and a first piezoelectric layer that is arranged between the first and the second electrode, the first resonator being connected to the signal-carrying connection of the first port and being connected to a reference ground potential;
  - an at least partially permeable coupling layer system having an alternating sequence of at least two  $\lambda/4$  mirror layers with a different acoustic impedance and a compensation layer which has a thickness of  $\lambda/8$ ;
  - a second resonator that is stacked one on top of the first resonator and is acoustically coupled to the first resonator via the coupling layer system, the second resonator having a third electrode, a fourth electrode and a second piezoelectric layer which is arranged between the third and the fourth electrode, the second resonator being connected between the first and the second connection of the second port.
2. The component as claimed in claim 1, further comprising:
  - an acoustic mirror that is arranged on that side of at least one of the first and the second resonator facing away from the coupling layer system, and comprises at least two alternating layers with thicknesses of  $\lambda/4$  of different acoustic impedance.
3. The component as claimed in claim 1, wherein the compensation layer is arranged between the mirror layers of the coupling layer system.

4. The component as claimed in claim 1, wherein the compensation layer is arranged between the second electrode and an uppermost mirror layer of the coupling layer system, or between the third electrode and a lowermost mirror layer of the coupling layer system.

5. The component as claimed in claim 1, wherein one of the mirror layers of the coupling layer system is combined with the compensation layer in a layer whose thickness is  $3\lambda/8$ .

6. The component as claimed in claim 1, further comprising at least one further compensation layer.

7. The component as claimed in claim 6, further comprising:

an acoustic mirror that is arranged on that side of at least one of the first and the second resonator facing away from the coupling layer system, and in which the at least one further compensation layer is a component of the acoustic layer.

8. The component as claimed in claim 1, wherein the compensation layer is formed from silicon oxide.

9. The component as claimed in claim 6, wherein the at least one further compensation layer is formed from silicon oxide.

10. The component as claimed in claim 1, further comprising an inductance, wherein the component is configured to provide a transfer function that has a split passband with two resonances that differ from one another by 50 to 200 MHz, and a bandstop area located between them, in which the inductance is connected in

parallel with the second resonator and is chosen such that an amplitude of a signal in the bandstop area between the resonances is increased by at least 50%.

11. The component as claimed in claim 1, further comprising further resonators that are stacked one on top of the other and are arranged above or below the first and the second resonator.

12. The component as claimed in claim 11, wherein at least some of the further resonators are in each case acoustically coupled to one another via a further at least partially permeable coupling layer system.